

THAT WHICH IS CLAIMED IS:

1. A method of accessing devices on a private network via a client on a public network, the method comprising the following steps performed by a gateway on the private network:

5 receiving a request from the client to access a Web server of a device on the private network, wherein the Web server has an address that is valid on the private network but is not valid on the public network;

10 redirecting the received client request to the Web server of the device on the private network;

15 scrubbing a Web page served by the Web server in response to the received client request, comprising replacing an address in the Web page that is not valid on the public network with an address that is valid on the public network; and

serving the scrubbed Web page to the client.

2. The method according to Claim 1, further comprising the following steps performed by the gateway prior to receiving a request from the client to access a Web server of the device:

5 ascertaining rights of a user to access one or more devices on the private network; and

10 serving a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights.

3. The method according to Claim 2, further

comprising the step of accepting a user log-in request  
from the client prior to ascertaining rights of the user,  
wherein the user log-in request includes an  
5 identification of the user.

4. The method according to Claim 2, wherein  
each link to a Web server includes a uniform resource  
locator (URL) for the gateway that is valid on the public  
network and an identification of a gateway port that is  
5 mapped to a respective Web server, and wherein each link  
is configured to send a request to a respective Web  
server via the gateway at an identified gateway port.

5. The method according to Claim 1, wherein  
the scrubbing step comprises replacing an address in the  
Web page that is valid only on the private network with a  
URL for the gateway that is valid on the public network  
5 and an identification of a gateway port that is mapped to  
the replaced address.

6. The method according to Claim 2, wherein  
the step of serving a Web page to the client comprises:  
scanning a range of private network addresses  
to identify Web servers listening on one or more selected  
5 ports;

mapping each identified Web server to a  
respective gateway port; and

creating a Web page that contains a respective  
link to each gateway port for each device for which the  
10 user has access rights.

7. A method of accessing devices on a private

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network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is not valid on the public network, the method comprising the following steps performed by a gateway on the private network:

ascertaining rights of a user to access one or more devices on the private network;

serving a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights;

receiving a request from the client to access a Web server of a device on the private network in response to user activation of a link on the Web page;

redirecting the received client request to the Web server;

scrubbing a Web page served by the Web server in response to the received client request, comprising removing links to Web servers of devices for which the user does not have access rights; and

serving the scrubbed Web page to the client.

8. The method according to Claim 7, further comprising the step of accepting a user log-in request from the client prior to ascertaining rights of the user, wherein the user log-in request includes an identification of the user.

9. The method according to Claim 7, wherein the scrubbing step further comprises replacing an address in the Web page that is not valid on the public network

with an address that is valid on the public network.

10. The method according to Claim 7, wherein each link to a Web server includes a uniform resource locator (URL) for the gateway that is valid on the public network and an identification of a gateway port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway at an identified gateway port.

11. The method according to Claim 7, wherein the step of serving a Web page to the client comprises: scanning a range of private network addresses to identify Web servers listening on one or more selected ports;

mapping each identified Web server to a respective gateway port; and

creating a Web page that contains a respective link to each gateway port for each device for which the user has access rights.

12. A method of accessing devices on a private network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is not valid on the public network, the method comprising the following steps performed by a gateway on the private network:

ascertaining rights of a user to access one or more devices on the private network;

serving a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes

15 a link to a Web server of each device on the private  
network for which the user has access rights, wherein  
each link to a Web server includes a uniform resource  
locator (URL) for the gateway that is valid on the public  
network and an identification of a gateway port that is  
mapped to a respective Web server, and wherein each link  
is configured to send a request to a respective Web  
server via the gateway at an identified gateway port;

20 receiving a request from the client to access a  
Web server of a device on the private network in response  
to user activation of a link on the Web page;

redirecting the received client request to the  
Web server;

25 scrubbing a Web page served by the Web server  
in response to the received client request, comprising:

removing links to Web servers of devices  
for which the user does not have access rights;  
and

30 replacing an address in the Web page that  
is not valid on the public network with an  
address that is valid on the public network;  
and

serving the scrubbed Web page to the client.

13. The method according to Claim 12, further  
comprising the step of accepting a user log-in request  
from the client prior to ascertaining rights of the user,  
wherein the user log-in request includes an  
5 identification of the user.

14. The method according to Claim 12, wherein  
the step of serving a Web page to the client comprises:

scanning a range of private network addresses  
to identify Web servers listening on one or more selected  
ports;

mapping each identified Web server to a  
respective gateway port; and

creating a Web page that contains a respective  
link to each gateway port for each device for which the  
user has access rights.

15. A gateway system that permits access to  
devices on a private network via a client on a public  
network, comprising:

means for receiving a request from the client  
to access a Web server of a device on the private  
network, wherein the Web server has an address that is  
valid on the private network but is not valid on the  
public network;

means for redirecting the received client  
request to the Web server;

means for scrubbing a Web page served by the  
Web server in response to the received client request,  
comprising means for replacing an address in the Web page  
that is not valid on the public network with an address  
that is valid on the public network; and

means for serving the scrubbed Web page to the  
client.

16. The gateway system according to Claim 15,  
further comprising:

means for ascertaining rights of a user to  
access one or more devices on the private network; and

means for serving a Web page to the client that

identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights.

17. The gateway system according to Claim 16, further comprising means for accepting a user log-in request from the client, wherein the user log-in request includes an identification of the user.

18. The gateway system according to Claim 16, wherein each link to a Web server includes a uniform resource locator (URL) for the gateway system that is valid on the public network and an identification of a gateway system port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway system at an identified gateway system port.

19. The gateway system according to Claim 15, wherein the means for scrubbing a Web page comprises means for replacing an address in the Web page that is valid only on the private network with a URL for the gateway system that is valid on the public network and an identification of a gateway system port that is mapped to the replaced address.

20. The gateway system according to Claim 16, wherein the means for serving a Web page to the client comprises:

means for scanning a range of private network addresses to identify Web servers listening on one or

more selected ports;

means for mapping each identified Web server to a respective gateway system port; and

10 means for creating a Web page that contains a respective link to each gateway system port for each device for which the user has access rights.

21. A gateway system that permits access to devices on a private network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is  
5 not valid on the public network, wherein the gateway system comprises:

means for ascertaining rights of a user to access one or more devices on the private network;

10 means for serving a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights;

15 means for receiving a request from the client to access a Web server of a device on the private network in response to user activation of a link on the Web page;

means for redirecting the received client request to the Web server;

20 means for scrubbing a Web page served by the Web server in response to the received client request, comprising means for removing links to Web servers of devices for which the user does not have access rights; and

25 means for serving the scrubbed Web page to the client.



22. The gateway system according to Claim 21, further comprising means for accepting a user log-in request from the client, wherein the user log-in request includes an identification of the user.

23. The gateway system according to Claim 21, wherein the means for scrubbing a Web page further comprises means for replacing an address in the Web page that is not valid on the public network with an address that is valid on the public network.

24. The gateway system according to Claim 21, wherein each link to a Web server includes a uniform resource locator (URL) for the gateway system that is valid on the public network and an identification of a gateway system port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway system at an identified gateway system port.

25. The gateway system according to Claim 21, wherein the means for serving a Web page to the client comprises:

means for scanning a range of private network addresses to identify Web servers listening on one or more selected ports;

means for mapping each identified Web server to a respective gateway system port; and

means for creating a Web page that contains a respective link to each gateway system port for each device for which the user has access rights.

26. A gateway system that permits access to devices on a private network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is not valid on the public network, wherein the gateway system comprises:

means for ascertaining rights of a user to access one or more devices on the private network;

means for serving a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights, wherein each link to a Web server includes a uniform resource locator (URL) for the gateway system that is valid on the public network and an identification of a gateway system port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway system at an identified gateway system port;

means for receiving a request from the client to access a Web server of a device on the private network in response to user activation of a link on the Web page;

means for redirecting the received client request to the Web server;

means for scrubbing a Web page served by the Web server in response to the received client request, comprising:

means for removing links to Web servers of devices for which the user does not have access rights; and

means for replacing an address in the Web

35 page that is not valid on the public network  
with an address that is valid on the public  
network; and  
means for serving the scrubbed Web page to the  
client.

27. The gateway system according to Claim 26,  
further comprising means for accepting a user log-in  
request from the client prior to ascertaining rights of  
the user, wherein the user log-in request includes an  
5 identification of the user.

28. The gateway system according to Claim 26,  
wherein the means for serving a Web page to the client  
comprises:

5 means for scanning a range of private network  
addresses to identify Web servers listening on one or  
more selected ports;

means for mapping each identified Web server to  
a respective gateway system port; and

10 means for creating a Web page that contains a  
respective link to each gateway system port for each  
device for which the user has access rights.

29. A computer program product that permits  
access to devices on a private network via a client on a  
public network, the computer program product comprising a  
computer usable storage medium having computer readable  
5 program code embodied in the medium, the computer  
readable program code comprising:

computer readable program code that receives a  
request from the client to access a Web server of a

device on the private network, wherein the Web server has  
10 an address that is valid on the private network but is  
not valid on the public network;

computer readable program code that redirects  
the received client request to the Web server;

computer readable program code that scrubs a  
15 Web page served by the Web server in response to the  
received client request, comprising computer readable  
program code that replaces an address in the Web page  
that is not valid on the public network with an address  
that is valid on the public network; and

20 computer readable program code that serves the  
scrubbed Web page to the client.

30. The computer program product according to  
Claim 29, further comprising:

computer readable program code that ascertains  
rights of a user to access one or more devices on the  
5 private network; and

computer readable program code that serves a  
Web page to the client that identifies each device on the  
private network for which the user has access rights,  
wherein the Web page includes a link to a Web server of  
10 each device on the private network for which the user has  
access rights.

31. The computer program product according to  
Claim 30, further comprising computer readable program  
code that accepts a user log-in request from the client,  
wherein the user log-in request includes an  
5 identification of the user.

32. The computer program product according to Claim 30, wherein each link to a Web server includes a uniform resource locator (URL) for a gateway on the private network that is valid on the public network and an identification of a gateway port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway at an identified gateway port.

33. The computer program product according to Claim 29, wherein the computer readable program code that scrubs a Web page comprises computer readable program code that replaces an address in the Web page that is valid only on the private network with a URL for a gateway on the private network that is valid on the public network and an identification of a gateway port that is mapped to the replaced address.

34. The computer program product according to Claim 30, wherein the computer readable program code that serves a Web page to the client comprises:

computer readable program code that scans a range of private network addresses to identify Web servers listening on one or more selected ports;

computer readable program code that maps each identified Web server to a respective port of a gateway on the private network; and

computer readable program code that creates a Web page that contains a respective link to each gateway port for each device for which the user has access rights.

35. A computer program product that permits access to devices on a private network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is not valid on the public network, the computer program product comprising a computer usable storage medium having computer readable program code embodied in the medium, the computer readable program code comprising:

computer readable program code that ascertains rights of a user to access one or more devices on the private network;

computer readable program code that serves a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights;

computer readable program code that receives a request from the client to access a Web server of a device on the private network in response to user activation of a link on the Web page;

computer readable program code that redirects the received client request to the Web server;

computer readable program code that scrubs a Web page served by the Web server in response to the received client request, comprising computer readable program code that removes links to Web servers of devices for which the user does not have access rights; and

computer readable program code that serves the scrubbed Web page to the client.

36. The computer program product according to Claim 35, further comprising computer readable program code that accepts a user log-in request from the client, wherein the user log-in request includes an  
5 identification of the user.

37. The computer program product according to Claim 35, wherein the computer readable program code that scrubs a Web page further comprises computer readable program code that replaces an address in the Web page  
5 that is not valid on the public network with an address that is valid on the public network.

38. The computer program product according to Claim 35, wherein each link to a Web server includes a uniform resource locator (URL) for a gateway on the private network that is valid on the public network and  
5 an identification of a gateway port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway at an identified gateway port.

39. The computer program product according to Claim 35 wherein the computer readable program code that serves a Web page to the client comprises:

computer readable program code that scans a  
5 range of private network addresses to identify Web servers listening on one or more selected ports;

computer readable program code that maps each identified Web server to a respective port of a gateway on the private network; and

10 computer readable program code that creates a

Web page that contains a respective link to each gateway port for each device for which the user has access rights.

40. A computer program product that permits access to devices on a private network via a client on a public network, wherein each device includes a Web server having an address that is valid on the private network, but is not valid on the public network, the computer program product comprising a computer usable storage medium having computer readable program code embodied in the medium, the computer readable program code comprising:

computer readable program code that ascertains rights of a user to access one or more devices on the private network;

computer readable program code that serves a Web page to the client that identifies each device on the private network for which the user has access rights, wherein the Web page includes a link to a Web server of each device on the private network for which the user has access rights, wherein each link to a Web server includes a uniform resource locator (URL) for a gateway on the private network that is valid on the public network and an identification of a gateway port that is mapped to a respective Web server, and wherein each link is configured to send a request to a respective Web server via the gateway system at an identified gateway port;

computer readable program code that receives a request from the client to access a Web server of a device on the private network in response to user activation of a link on the Web page;



computer readable program code that redirects  
30 the received client request to the Web server;

computer readable program code that scrubs a  
Web page served by the Web server in response to the  
received client request, comprising:

computer readable program code that  
35 removes links to Web servers of devices for  
which the user does not have access rights; and

computer readable program code that  
replaces an address in the Web page that is not  
valid on the public network with an address  
40 that is valid on the public network; and

computer readable program code that serves the  
scrubbed Web page to the client.

41. The computer program product according to  
Claim 40, further comprising computer readable program  
code that accepts a user log-in request from the client  
prior to ascertaining rights of the user, wherein the  
5 user log-in request includes an identification of the  
user.

42. The computer program product according to  
Claim 40, wherein the computer readable program code that  
serves a Web page to the client comprises:

computer readable program code that scans a  
5 range of private network addresses to identify Web  
servers listening on one or more selected ports;

computer readable program code that maps each  
identified Web server to a respective gateway port; and

computer readable program code that creates a  
10 Web page that contains a respective link to each gateway

port for each device for which the user has access rights.